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SOME NOTES ON COLLECTING.

Within the past three years I have discovered the haunts of several of the minute species of mosses on my collecting trips, such as *Archidium Ohioense*, *Phascum* sp., *Pleuridium subulatum*, *Astomum* sp., *Ephemerum crassinervium*, *Physcomitrium immersum*, *Pyramidula tetragona*, and *Bruchia flexuosa.*

Six of these beautiful little plant species I found in the close vicinity of Winona, where I had collected for over fifteen years. This fact, linked with the other fact that these and similar minute mosses are in late years very little represented in collections, leads me to suspect that our younger generation of moss students, including myself, have yet to learn *where* and *when* to look for them. Having by chance stumbled upon the hiding places of these little elves, not merely sporadic patches but the regular haunts, it has occurred to me that it might be profitable for the more enthusiastic collectors of the Sullivant Chapter, and for all interested, to learn where and when I found these mosses.

The *Ephemerum* and *Physcomitrium* I found associated together several years ago on the shaded edge of a Mississippi slough, where weeds and grass do not come up to furnish excess of shade. The months are October and November. Since then I have annually looked for them on my November tramps through the river bottoms and most always I bring home some Ephemerum and its protonema. The Physcomitrium is more freaky, and is not easily found, apparently depending for its best development upon more exact seasonal conditions.

The *Archidium*, *Phascum*, *Pleuridium* and *Astomum*, I found first two years ago on the top of our bluffs 450 feet above the level of the Mississippi bottoms, on slightly north-facing surfaces, which during early summer become covered with a scant growth of grass, but which the dry autumn leaves again practically bare for the winter snows. The outcrop of Magnesian limestone weathered to fragments near the tops of the bluffs are there mantled over by a thin sheet of modified drift clay, or possibly it is simply wind-blown clay, which I doubt, blackened with the mould of the scant vegetation. It is in this situation that these little mosses have their home, starting their annual life effort *under the melting snows.* By a mere chance I stumbled upon them where I never thought it possible for anything worth looking for to exist, on one of my late March bluff rambles, when the roads were still muddy from snow-water. Repeated visits (for I am less than a mile from the spot at this writing, January) showed that the fruits ripen rapidly; and after the middle of April they soon show signs of weathering, and shortly seem to disappear altogether, the ground receiving now too much heat for their existence. Indeed the drouth has the past two seasons come on so rapidly that in case of *Astomum* only a few of the abundantly set capsules actually ripened spores.

The *Pyramidula* I found in June, 1901, in the upper Mississippi valley, in scant soil, probably windblown, in the shallow depressions of the waterworn granitic outcrops of that interesting region. It was very abundant there, though I found only weathered plants. I regret that the distance, nearly the width of our State, makes it difficult to visit that profitable collecting ground often.

Lastly, the *Bruchia* I found only in June, 1902, close to the railway station at Dodge, Wis., some miles north of Winona, in the Trempealeau River valley. The plants occurred in greatest abundance among the short juncus and similar grass-like plants in a patch of fallow ground close by a tamarack swamp. In this case also all were already badly weathered. It is my purpose to revisit that station five or six weeks earlier this spring to secure plants in better condition.

In closing this note it may be worth mentioning incidentally that the geographical range of several of the species noted has been considerably extended.

JOHN M. HOLZINGER.

NOTES.

POGONATUM BREVICAULE (Brid.) Beauv.

In a recent letter M. Jules Cardot calls attention to the fact that Bridel in 1798 first gave the name *Polytrichum brevicaule* (Muscol. Recent II. pt. 1, p. 87) to the moss which has since been called *Pogonatum brevicaule* and that the specific name *tenue* was given to the same plant in the same year by Menzies, hence it is next to impossibie to say which has the priority.

This being the case I agree with M. Cardot that *P. brevicaule* (Brid.) *Beauv.* is the proper name for this plant, because this name was in use for eighty nine years before Mrs. Britton made the new combination.

A. J. GROUT.

PSILOPILUM TSCHUCTSCHICUM C. Müll.

In recently looking over a collection of mosses received at the Botanical garden from Prof. Macoun, which he made in the upper Yukon region last summer, I found good fruiting specimens of what I take to be the above species. They are undoubtedly the same as the sterile plants I collected on the Klondike river in 1899 and referred to *P. arcticum.* They are distinguished from this latter by the much longer, less curved capsules, less imbricated leaves, incurved when dry and by the margins of the leaf and also of the lamellæ, which are entire or only slightly undulate above, while *P. arcticum* has both leaf border above and lamellæ on margin irregularly serrate with crowded, crenulate teeth. In the first specimens I examined this last difference was scarcely noticeable owing to the much abraided margins. The distinction of basal leaf cells between the two species is not apparent, being quite variable in different leaves from the same plant. (See J. M. Holzinger's article on these species in BRYOLOGIST V:80, 1902). Also the difference in the exothecal cells does not seem to have been clearly pointed out. In *arcticum* the cells on the incurved side of the capsule are short, often slightly transversely elongated, while on the opposite side they are quite rectangular and mostly 2 to 3 times longer than wide. In *Tschuctschicum* the cells are more uniform around the capsule, mostly from a little longer than broad to about twice longer. The spores of the Macoun specimens measure from .022 to .025 mm.

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